

**13. Courses of Study and Scheme of Assessment  
ME ENERGY ENGINEERING**

**(2021 REGULATIONS)**

**(Minimum No. of credits to be earned: 71\*)**

Course Code	Course Title	Hours / Week			Credits	Maximum Marks			CAT
		Lecture	Tutorial	Practical		CA	FE	Total	
<b>I SEMESTER</b>									
21SE01	Applied Numerical Methods	3	1	0	4	50	50	100	FC
21SE02	Design of Renewable Energy Systems	3	1	0	4	50	50	100	FC
21SE03	Energy Conservation and Management	3	1	0	4	50	50	100	PC
21SE04	Energy Resources, Economics and Environment	3	1	0	4	50	50	100	PC
21____	Stream Specific Core – I	3	0	0	3	50	50	100	SSC
21SE06	Research Methodology and IPR	2	0	0	2	50	50	100	RMC
21SE72	Audit Course – I	2	0	0	Grade	100	0	100	MC
21SE51	Energy Engineering Laboratory	0	0	4	2	50	50	100	PC
21SE52	Energy Audit Laboratory	0	0	4	2	50	50	100	PC
<b>Total 31 hrs</b>		<b>19</b>	<b>4</b>	<b>8</b>	<b>25</b>	<b>500</b>	<b>400</b>	<b>900</b>	
<b>II SEMESTER</b>									
21SE07	Computational Fluid Dynamics	3	0	0	3	50	50	100	PC
21____	Stream Specific Core – II	3	1	0	4	50	50	100	SSC
21SE__	Professional Elective – I	3	0	0	3	50	50	100	PE
21SE__	Professional Elective – II	3	0	0	3	50	50	100	PE
21SE__	Professional Elective – III	3	0	0	3	50	50	100	PE
21SE82	Audit Course – II	2	0	0	Grade	100	0	100	MC
21SE61	Computational Fluid Dynamics Laboratory	0	0	4	2	50	50	100	PC
21SE62	Energy Simulation Laboratory	0	0	4	2	50	50	100	PC
21SE63	Industry Visit and Technical Seminar	0	0	4	2	50	50	100	EEC
<b>Total 30 hrs</b>		<b>17</b>	<b>1</b>	<b>12</b>	<b>22</b>	<b>500</b>	<b>400</b>	<b>900</b>	
<b>III SEMESTER</b>									
21SE__	Professional Elective – IV	3	0	0	3	50	50	100	PE
21____	Open Elective	3	0	0	3	50	50	100	OE
21SE71	Project Work - I	0	0	12	6	50	50	100	EEC
<b>Total 18 hrs</b>		<b>6</b>	<b>0</b>	<b>12</b>	<b>12</b>	<b>150</b>	<b>150</b>	<b>300</b>	
<b>IV SEMESTER</b>									
21SE81	Project Work - II	0	0	24	12	50	50	100	EEC
<b>Total 24 hrs</b>		<b>0</b>	<b>0</b>	<b>24</b>	<b>12</b>	<b>50</b>	<b>50</b>	<b>100</b>	
<b>STREAM SPECIFIC CORE COURSES</b>									
<b>STREAM SPECIFIC CORE 1 (one to be opted)</b>									
21SE05	Industrial Combustion Systems	3	0	0	3	50	50	100	SSC
21SE09	Modeling and Analysis of Electrical Machines	3	0	0	3	50	50	100	SSC
<b>STREAM SPECIFIC CORE 2 (one to be opted)</b>									

21SE08	Thermal Systems Design	3	1	0	4	50	50	100	SSC
21SE10	Electric Drives and Control	3	1	0	4	50	50	100	SSC
<b>PROFESSIONAL ELECTIVE THEORY COURSES (Four to be opted)</b>									
<b>COMMON FOR MECHANICAL AND ELECTRICAL ENGINEERING STREAMS</b>									
21SE21	Advanced Power Plant Engineering	3	0	0	3	50	50	100	PE
21SE22	Green Buildings	3	0	0	3	50	50	100	PE
21SE23	Design of Solar Systems	3	0	0	3	50	50	100	PE
21SE24	Design and Analysis of Turbo machines	3	0	0	3	50	50	100	PE
21SE25	Hydrogen Energy and Fuel Cells	3	0	0	3	50	50	100	PE
21SE26	Bio-Energy Conversion Technologies	3	0	0	3	50	50	100	PE
21SE27	Instrumentation for Energy Systems	3	0	0	3	50	50	100	PE
21SE28	Energy Storage Devices and Systems	3	0	0	3	50	50	100	PE
<b>MECHANICAL ENGINEERING STREAM</b>									
21SE29	Fundamentals of Turbulence and Boundary Layer Theory	3	0	0	3	50	50	100	PE
21SE30	Energy Conservation in HVACR Systems	3	0	0	3	50	50	100	PE
21SE31	Aerodynamics of Streamlined and Bluff Bodies	3	0	0	3	50	50	100	PE
21SE32	Steam Generation Technology	3	0	0	3	50	50	100	PE
21SE33	Design of Wind Energy Systems	3	0	0	3	50	50	100	PE
<b>ELECTRICAL ENGINEERING STREAM</b>									
21SE34	Soft Computing Techniques for Renewable Energy Systems	3	0	0	3	50	50	100	PE
21SE35	Optimization Techniques	3	0	0	3	50	50	100	PE
21SE36	Hybrid Electric Vehicles	3	0	0	3	50	50	100	PE
21SE37	Distributed Generation and Micro Grids	3	0	0	3	50	50	100	PE
21SE38	Smart Grid Technologies	3	0	0	3	50	50	100	PE
21SE39	Flexible AC Transmission System	3	0	0	3	50	50	100	PE
<b>OPEN ELECTIVE THEORY COURSES (One to be opted)</b>									
21SE91	Business Analytics in Practice	3	0	0	3	50	50	100	OE
21SE92	Life Cycle Assessment and Eco-Design	3	0	0	3	50	50	100	OE
21SE93	Systems Engineering and Management	3	0	0	3	50	50	100	OE

\* Indicated is the minimum number of credits to be earned by a student.

**CAT – Category; PC – Professional Core; PE - Professional Elective; RMC - Research Methodology and IPR; EEC – Employability Enhancement Course; MC - Mandatory Course; Grade – Completed / Not Completed; OE – Open Elective.**